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Strengthening and weakening boundaries

Students negotiating technology mediated learning

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Editors' introduction

We have seen that it is often differences and contradictions in research findings that challenge us to devise explanatory frameworks. The previous chapters in this part show how such differences might be explained by the influences of learner development, context and individual differences. Once again, we have chosen to highlight work that demonstrates a rigorous approach to exploring these problems. In this chapter the authors use the Bernsteinian framework of boundaries to help them interpret data from six years of survey based research. They demonstrate how to use this combination of empirical research and a theoretical lens to explore complex issues including: boundaries between, in and out of the curriculum; social and academic uses of technology; and physical and virtual learning environments. Finally, they challenge us to use these findings to consider the new literacies and practices that learners are beginning to need, and which are explored in Part 3.

Introduction

Current representations of student learning experiences within a technology mediated world are premised in the media, the literature and the blogosphere on notions of change – indeed of transformation, pertaining to modernist notions of development and improvement. Generally, the discourse of students' technology mediated learning experiences is of a 'greater good' with the concomitant discourse of change representing technology mediated change as a desired and desirable end. There is a dangerous slippage between these well-intentioned aspirations and a kind of single-minded evangelism, which quietly ignores the contradictions emerging from both empirically

based research investigations and reported reflective practice. These kinds of blinkered views do not assist the aims of all those who seek to harness the affordances of technology in support of student learning.

Fortunately, there are also emergent contradictions and paradoxes being acknowledged and explored in the literature (see, for example, Traxler 2009). This chapter presents the findings of a South African study of students' ICT-mediated learning, and offers a framework for describing and exploring the contradictions and paradoxes that were observed. This provides a way of capturing ambiguities and allows for two seemingly opposite trends to be occurring concurrently.

The research and its framework

The observations in this chapter are based on six years of multi-phased research into more than 10 000 university students' access to and use of information and communication technology (ICT). The project has different dimensions: a survey of 6577 students conducted in 2004 amongst six universities in one South African region and a second survey in 2007 of 3533 students among six universities in four other regions. A mixed-method approach was adopted including a quantitative analysis of the fifty-eight question survey, and a qualitative analysis of the questionnaire's open-ended questions and eighteen related student interviews. In addition, a 2008 survey of 4226 users of the learning management system (LMS) was undertaken at our own institution and, in 2009, 466 students from four other universities were also surveyed. These surveys have formed the basis of a nested approach, leading to telephone interviews and focus groups being undertaken at the time of writing.

At the outset of the project, we sought to set the scope and delineate the parameters of the investigation tightly. Thus we set out to focus on a pedagogy of formal learning in a defined curriculum; defined learning spaces (i.e. on campus and off campus, virtual and physical); students' academic activities rather than their social ones; and access to resources (including physical, personal and contextual resources).

Reflecting on the work to date, we realised that these assumptions were at times confirmed, although sometimes in surprising ways. At the same time, the assumptions were also challenged, as the findings turned out to be more fuzzy than we had anticipated. Thus we focused our attention on the respective categories delineated by our assumptions and to issues of distinctiveness, permeability, porousness and inconsistency. In the light of these considerations, we found Bernstein's work useful for framing the discussion; his work provides an orienting framework. Thus, we use the term boundaries in the Bernsteinian sense of the relationship or border between two different categories or contexts. For Bernstein a stronger boundary is tightly closed and non-porous – difficult to cross. A weaker boundary is more

permeable. What is compelling about the Bernsteinian notion of a boundary is that it is not a polarised representation, rather boundary strength is relative. Boundary strength (or weakness) is conceptualised along a continuum rather than as a binary.

The starting point is that ‘there is always a boundary. It may vary in its explicitness, its visibility, its potential and the manner of its transmission and acquisition. It may vary in terms of whose interest is promoted or privileged by the boundary’ (Bernstein and Soloman 1999: 273).

The Bernsteinian framework also provides a way of describing the what and who of pedagogy, through the concepts of classification and framing. Classification describes relations between and the degree of maintenance between categories, including the boundaries between agents, spaces and discourses. (the ‘what’ and ‘who’ of pedagogy). Classification refers to the degree of strength between contexts or categories, and is expressed as being stronger, where boundaries are explicit and categories are insulated from one another, or weaker, where there is integration, or where the boundary is weak or blurred. Framing refers to the strength of control ‘from above’ within those contexts or categories. It therefore provides a way of describing the ‘how’ of pedagogy.

This chapter approaches ICT-mediated student experiences through the lens of boundaries and shows how boundaries are being strengthened, weakened or reconstituted. Boundaries, as explained, are delineators of categories and contexts. The form and strength of those boundaries are inevitably associated with power, although ‘strong’ does not connote ‘good’ nor does ‘weak’ connote ‘bad’. The power relations intertwined with boundaries are often complex and subtle.

In the sections following, we draw on our findings to show in which instances boundaries are strengthening and when they are weakening, bearing in mind that there are contexts where examples of both may exist.

Strengthening boundaries

The first dimension where boundaries are strengthening is that of the digital divide, or indeed a digital chasm, as broadband exacerbates existing divides and introduces new ones (Brown and Czerniewicz 2009). On campus/off campus divides and social class distinctions are deepened by class-based personal access in private homes. Issues of access are pertinent to student experiences because they shape what is possible (Czerniewicz and Brown 2005).

The second dimension where boundaries are being strengthened by ICTs is in pedagogical relationships; pedagogy being the interaction of student, teacher and curriculum content (Yates 2009). A central delineation is the strength of the boundary of lecturer–student pedagogic identities, i.e. the relation between

the agents. It is this boundary that is claimed to be weakened in such mantras as ‘the guide on the side’ borne of the claim that the introduction of ICTs is shifting teacher–student power relations.

However, in our work we have observed that students’ experiences continue to be largely shaped by teachers and institutions. Teachers set the formal curriculum and determine both the times and places where and when teaching takes place; they still determine assessment tasks and assessment criteria. Institutions have generally not changed their assessment criteria to align them with emergent ICT-based pedagogical practices. Indeed in pedagogical terms, ICTs are being used to strengthen existing boundaries and support existing power relations. Thus there are examples of ICTs being used to cement long-standing pedagogical roles rather than challenge them. Students welcome the presentation of content in class and comment for example, ‘I enjoy it if lecturers use powerpoint in class’ [S2-J-295] and are grateful when material (including answers) are provided online, as in ‘[I like] answers for classwork that lecturers put on [LMS name] & e-mails they send us to keep us updated & for old exam papers’ [S2-J-295].

These and other comments are positive in tone, suggesting that the use of technology to support traditional transmission modes is considered useful by students. Interestingly, very few students talk about using ICTs as a reason not to participate in lectures. In fact, the students we studied strongly value the face to face interaction of lectures and see ICTs as playing a supportive rather than replacement role despite many lecturers’ concerns to the contrary. This comment is typical, ‘I would be strongly averse to using [LMS name] exclusively because I think face-to-face interaction is very important in a learning environment’ [S3-A-2564].

We have not observed instances of boundaries weakening in terms of pedagogical relations; indeed the relations between teachers and students appear to be as they ever were, with ICTs mainly being used to strengthen or replicate traditional teaching activities. Our research has provided no indication of educators changing their roles thanks to the introduction of technologies, indeed no sign of the student–teacher power relationship being challenged at all.

The third dimension where we observed strong boundaries remaining intact is between social and academic activities. This contrasts with commentary from elsewhere (for example Riddle and Howell 2008) that students in a digitally mediated world interweave their various activities as part of everyday life. It is often argued that students move between the academic and non-academic or social aspects of their lives and that they undertake them simultaneously and seamlessly.

In our study we observed that the boundaries between the social software and the academic learning management systems remain strong. We found that the uptake of social software in South African higher education is low:

71 per cent of students hardly ever publish their own online content and 42 per cent hardly ever upload resources to the Internet. In relation to learning, 71 per cent of students hardly ever keep course-related blogs and 60 per cent hardly ever share course resources online. Such findings underline that the 'knowledge power' remains with the teachers.

What is especially important is that these strong boundaries between academic and social tools appear to be as a result of students' preferences and choice. Some students consider the two to have different purposes and strengths, as in 'I consider [our LMS] to be an academic resource. Other social networking sites are better suited to non-course activities' [S3-A-1273] and '[our LMS] is not for non course activities – it frustrates me when people use the chat room like msn or facebook. it is strictly to do with varsity work' [S3-A-3975]. Students are also conscious of the problems of time wasting in merging the two, as in '... if I started to use Mxit [cell phone chat], I would just Mix all day and all night. So I don't want to go in there. into that habit' [I1-F-1].

These examples of contexts where boundaries remain strong (or are becoming relatively stronger) suggest that in many ways higher education may not be disrupted by ICTs quite as much as is imagined (or feared).

Weakening boundaries

At the same time, there are dimensions of the student experience where boundaries are weakening and existing power relations do appear to be being disturbed. The first instance is in aspects of the curriculum whereby course content is always scaffolded, adjusted, selected and ordered. While it has always been possible for students to access resources outside the curriculum and to read ahead for example, widening access to ICTs, especially through the web but also through online databases, mean that curriculum boundaries are changing. This is the first dimension where we see boundaries weakening; in the past, 'in the curriculum' and 'out the curriculum' were clear concepts – now the boundaries between what is 'in' and what is 'out' of the curriculum are becoming porous in various ways, because of ICTs.

The most obvious challenge to the traditional curriculum and to local control of content is with regard to preselected content that has traditionally been in the hands of teachers. Students are able to disregard content selected by others and take control of content choice. This is experienced both positively and negatively. Positive experiences of this boundary weakening means that the students' experiences can be enriched, especially advantageous when students have poor teachers. Thus a student from a previously disadvantaged South African university comments: 'But when you go to Internet, you'll find that ... maybe in Britain, maybe in Oxford University, they are doing the same stuff as you are doing. And you can get tutorial questions based on that ...'

[I1-F-6] and another says that she 'Can get more information about certain projects that you can't get from lecturer, tutor etc' [S2-G-11357].

At the same time, our findings draw attention to how overwhelmed students can feel. This question was not probed for specifically, yet a number of comments revealed how daunted the student can be. Thus,

when I'm using an internet you know that's where I get some frustration
I only know some [of] the addresses, 3 of them you know while other
people know more than I know and from there actually sometimes I
don't get what I want from the internet

[I1-H-15]

and 'not all information is 100% accurate – books are more reliable, I think' [S2-H-1807] and

I feel a lot better when I actually went out and found books for research.
For instance ... going on line... you have to find the right site and once
you do find the right site your information might not be all there so
personally I feel that I do a lot better without computers'

[I1-I-21].

In addition to these examples, which point to shifts in content selection, ICTs have seen boundary weakening with regards to pacing. This occurs when course notes and presentations are provided ahead of time. While a version of this was previously possible, the increased ease of access may provide students with increased confidence and sense of status, as in 'The use of sites like Dti and the news at SABC 3 and labour.net.com, help me keep ahead on my studies. I am able to read ahead, and sometimes challenge my lecturers on subject matters that I read about' [S2-G-3093].

These weak boundaries allow students to prepare better for classes, as in 'the great thing about it is getting your notes before class and preparing beforehand' [S2-H-1388], and to review work presented in lectures at their own pace later, as in 'Use of ICTs helps in understanding things that one did not get in the lecture, through revisiting powerpoint slides presented in class' [S2-F-1010]. They are also given opportunities to keep up when traditional avenues fail 'So they say they're going to give us textbooks. But they didn't.. we only got it after June. So we rely on Internet to get that book.. we were just like on the Internet the whole semester' [I1-F-7].

In addition, even in contexts where webcasting is not the norm, students can record and share lectures, making it possible to hear the exact lecture at a later stage and weaken the temporal strength of content presentation. 'He explains so fast. So I just record sometimes when I feel that I'm tired.. my brain cannot concentrate anymore, and if they [other students] want. They sometimes come to get it' [I2-H-3].

Learning environments have been previously understood to be static, stable and location specific. Thus lectures take place in lecture halls, seminars in smaller rooms on campus and homework or independent work in the library or off campus. Virtual environments are relatively recent, and even more recent is the wireless access that makes it possible for them to be accessed in formal learning locations. How does this play out? ICTs are weakening the boundaries of learning environments in ways in that learning becomes less location specific, as noted by 'ICTs makes it easier, your work is more mobile. Work is not restricted to University or home' [S2-I-2914] and '[I like] easy access to information, abundance of advice and choice of sources, mobility of access' [S2-I-2680].

Wireless hot spots are not yet the norm in South African universities but cell phone ownership and access is ubiquitous, profoundly changing the student ICT-mediated experience in terms of access, connectivity, learning environment, presence, temporality and locatedness. Thus boundaries are being weakened to the point of being reconstituted. Learning spaces especially are being reconstituted as students use cell phones for access and use in unanticipated ways. Thus access is being determined by connectivity not by location. These experiences are increasingly common. 'You can access it [the LMS] anywhere even from your cellphone' [S3-A-3490] and 'You can use your phone via google. Maybe I don't have time for a computer. Or maybe it's late, and the assignment must be submitted. Then I use my phone' [I1-F-5]. Such experiences challenge the authoritarianism of time and space.

At the same time as our earlier observations, it must be noted that boundary weakening is also to be observed in terms of tools, and the purposes for which they were intended or designed. It is significant that while this does occur, only a small percentage of students report that they use social software such as Facebook and Flickr for academic purposes (3 per cent – 133 students and 4 per cent – 176 students respectively). Some suggestions as to why are evident in the qualitative responses. This may be because it is an easy avenue that students can control as in 'The lecturers don't extensively use [the LMS], so the students also use other forum such as Facebook and SMSes' [S3-A-3374] or that these tools offer global opportunities for learning as in 'I belong to a virtual community – where participants from around the globe have discussions and virtual conferences related to human rights' [S3-A-5812].

However, it appears that the boundary weakening is more pronounced in terms of how learning management systems are adapted for non-course related purposes rather than how social software is appropriated for academic purposes.

It is interesting that while most students prefer strong demarcations between social and academic activities and tools, there are a vociferous few who would prefer weaker boundaries in the form of increased integration, and say that they 'wish we had a university calendar including all social, activism,

seminar, etc events' [S3-A-2100] and 'It [the LMS] needs more social network features (twitter-like status updates at the very least) so that one can develop an online academic community rather than the highly restrictive per-course communities at present' [S3-A-2403]. We need to know whether students indeed wish to break down the barriers between social and academic activities, or whether they merely wish to have more resources to enable social activities amongst the student community, effectively sustaining strong boundaries between the social and the academic. It is also important to find out who these students are, and whether they have shared characteristics that might explain their views.

Unexpectedly, although the learning management system is designed to support course-related activities, it has also been appropriated by students who use it for student activism and social responsiveness projects. Thus,

Being a member of the Green Campus Initiative I have found [the LMS] extremely useful and very helpful in furthering our cause. The GCI [LMS] site is our primary means of communication and publicity to the student body. [The LMS] participation in Green Week was also extremely important

[S3-A-2188].

And finally, while the majority of students show no indications of widespread ICT-enabled multitasking, a few do indeed provide examples of multitasking, an obvious example of boundary weakening where affordances of technology enable easy movement between online activities. Thus students talk socially and share work in chat rooms, and work and study almost simultaneously online,

maybe you are chatting with someone in [nearest town] and you are asking them what life is like...and (at the same time) you can send them your assignment, and they can send it back. ...and you check it while you're chatting. And then you can re-do some things and send it back.

Also,

because if you don't know anything, you can just go search, and you can type back to your assignment. As you are doing your assignment... it's encouraging. Because you can do something recreational on the computer to refresh your mind, and then go back to your work.

[I1-F-7]

ICTs can make these types of activities seamless and can also occur in and across a range of teaching and learning spaces.

As observed here, boundaries are weakening in specific ways at the level of student experience. Such instances occur in very specific contexts; higher education culture is generally rigid and hierarchical. Thus, any weakening of

boundaries at the level of each individual student is also bound to have some effect on power relations in the aggregate. Boundary weakening is therefore intrinsically caught up with the power dimensions of institutional culture.

Discussion

The journey that students travel in higher education has always been challenging and confusing and technologies have always been one element of their travels. That there is a profound digital technological disruption in society occurring presently is not in dispute. What is not clear is how this is manifested in student experiences coming into and studying in higher education institutions. Academics inducting students into disciplines and into academic discourses have to (amongst other things), be mindful of the influences and mediating roles of ICTs and new social practices. Making sense of student experiences is not helped by grand claims, by easy generalisations or by homogenising presentations of student identities. It is also not helped by representations of academics as teachers who are somehow stingy with their knowledge or power hungry in relation to student learning.

The concept of boundaries provides one way of thinking about where and how the experiences of students we studied are shifting; it has provided a way of reflecting on our observations and of mapping where and how shifts are, or are not, occurring. We have seen that there are some clear trends (somewhat unanticipated), that there are simultaneous realities and that there are emerging and conflicting practices. We have observed boundary strengthening propping up both entrenched and new roles, and we have seen boundaries weakening in ways that both enhance and threaten, democratise and close down.

It is demanding to track how these shifts are occurring, and several notes of caution must be sounded. It is important to research and report what is actually happening and not to generalise beyond the observed cases. New technologies indeed have the potential to enable all sorts of new practices but these may be transient and changes may not percolate through deeply entrenched institutional cultures. It is important to report accurately exactly how much and how often these shifts are happening. There are instances where different practices are observed in small or occasional numbers, and receive a disproportionate amount of attention simply because they are unusual or interesting. These observations are too often generalised to a broader population. It is only a very small group of our students who are online producers, for example. The rest are sustaining existing demarcations. Rather than making claims about all students, it would be more useful to consider which students are behaving differently, in which conditions and why.

Evolving changes, weakening boundaries and unusual new practices are fascinating precisely because they are new and unexpected, and not

surprisingly researchers are drawn to them. But they are not automatic harbingers of profound change to either student experience or to higher education itself. Sometimes, what appear to be new trends are fleeting and disappear. Oftentimes changes occur in specific conditions and configurations, for example in a specific disciplinary context.

It is important to be careful about what boundary shifts mean and what they imply. Quite often these shifts mean that existing activities continue to exist, fundamentally unchanged as activities, but through new routes or media. Thus, access to more information, as described above, may simply mean that there is more information available. This may not always be construed by students as a 'good thing', or even easy or helpful and it may introduce new problems, as is often noticed by those who write about the necessity for critical literacies alongside information literacies. Access to more information does not automatically challenge power relations within formal education, although in certain instances it might. As long as academics select and assess students on the curriculum content of their choosing, all the information in the world that students may have access to is not necessarily altering the prevailing power relations in higher education classrooms.

Of course, the weakening of boundaries may well suggest long-term changes. But boundaries weaken in different ways and in different constellations, and it is not possible to tell as the porousness increases, where cave ins might occur; where genuine remediation is happening and where there will be complete reconfigurations. Weakening boundaries is not in itself a sign of authority being challenged. It may be a new form of authority. In addition, weakened boundaries suit students from some social backgrounds and not others, and are useful in certain conditions and not in others.

Boundaries can be constraints in the sense of being barriers or they can be the opportunities in the sense that what is on the edge may lead to something new and valuable. Whichever meaning boundaries have, students, more than ever, will require the information and technological literacies to effectively engage with them, and the critical literacies to understand what they might retract and what they might offer.

Acknowledgements

With grateful thanks for thoughtful feedback and stimulating conversations with Karl Maton (University of Sydney), Teresa Barnes (University of Illinois) and Kevin Williams (University of Cape Town).

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